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(57) Abstract:

PURPOSE: To obtain the catalytic combustion type gas turbine combustor, in which a contact area of a honeycomb-structure catalyst and a mixed gas of fuel and air is increased and combustion efficiency thereof is excellent, by setting up a cell, to which a spiral-groove processing is executed, to the catalyst body used when the mixed gas is burnt.

CONSTITUTION: The honeycomb-structure catalyst body has spiral grooves, and the mixed gas flows along the grooves spirally processed when it passes in the cells. Accordingly, the flow of a fluid takes a spiral vortex, the diffusion of fuel is promoted, and catalytic combustion is executed efficiently. The spiral grooves are processed to the honeycomb-structure catalyst body in such a manner that a shape such as a catalyst support shape is molded by extruding heat-resistant bars, to which spiral grooves are formed, while turning the bars at the same time only by the number of holes. A catalyst manufactured by carrying a metal used as a normal combustion catalyst to a carrier is employed as the catalyst used for the honeycomb-structure catalyst body. A precious metal group catalyst using a platinum group element, such as Pt, Pt-Ir, Pt-Pd, etc. or a base metal group catalyst, such as MnO_2, Co_2O_3, CuO, etc. or the like is cited as the metallic catalyst. α-Alumina, mullite, titania, etc. are cited as the carrier, and one kind or two kinds or more of these compounds selected from these groups are used.